

Ph.D. degree holders in economics and marketing are likely to face keen competition for teaching positions in colleges and universities. However, opportunities should be good in other areas such as industry and consulting firms.

Demand for qualified marketing research analysts should be strong due to an increasingly competitive economy. Marketing research provides organizations valuable feedback from purchasers, allowing companies to evaluate consumer satisfaction and more effectively plan for the future. As companies seek to expand their market and consumers become better informed, the need for marketing professionals will increase.

Opportunities for marketing research analysts with graduate degrees should be good in a wide range of employment settings, particularly in marketing research firms, as companies find it more profitable to contract out for marketing research services rather than support their own marketing department. Other organizations, including financial services organizations, health care institutions, advertising firms, manufacturing firms producing consumer goods, and insurance companies may offer job opportunities for marketing research analysts.

Those with a bachelor's degree, who have a strong background in mathematics, statistics, survey design, and computer science, may be hired by private firms as research assistants or interviewers.

Earnings

Median annual earnings of economists and marketing research analysts were \$48,330 in 1998. The middle 50 percent earned between \$34,650 and \$74,500 a year. The lowest 10 percent earned less than \$26,540 and the highest 10 percent earned more than \$94,810 a year. Median annual earnings in the industries employing the largest number of economists and marketing research analysts in 1997 were as follows:

Federal Government	\$65,300
Management and public relations	51,900
Research and testing services	47,500



The Federal Government recognizes education and experience in certifying applicants for entry-level positions. The entrance salary for economists having a bachelor's degree was about \$20,600 a year in 1999; however, those with superior academic records could begin at \$25,500. Those having a master's degree could qualify for positions at an annual salary of \$31,200. Those with a Ph.D. could begin at \$37,700, while some individuals with experience and an advanced degree could start at \$45,200. Starting salaries were slightly higher in selected areas where the prevailing local pay was higher. The average annual salary for economists employed by the Federal Government was \$67,800 a year in early 1999.


Related Occupations

Economists are concerned with understanding and interpreting financial matters, among other subjects. Other jobs in this area include financial managers, financial planners, insurance underwriters, actuaries, credit analysts, loan officers, and budget analysts.

Marketing research analysts do research to find out how well the market receives products or services. This may include planning, implementation, and analysis of surveys to determine people's needs and preferences. Other jobs using these skills include psychologists, sociologists, and urban and regional planners.

Sources of Additional Information

- For information on careers in economics and business, contact:
-  National Association for Business Economics, 1233 20th St. NW., Suite 505, Washington, DC 20036. Internet: <http://www.nabe.com>
 - For information about careers and salaries in marketing research, contact:
 -  Marketing Research Association, 1344 Silas Deane Hwy., Suite 306, Rocky Hill, CT 06067-0230. Internet: <http://www.mra-net.org>

-  Council of American Survey Research Organizations, 3 Upper Devon, Port Jefferson, NY 11777. Internet: <http://www.casro.org/index.htm>
- Information on acquiring a job as an economist with the Federal Government may be obtained from the Office of Personnel Management (OPM) through a telephone-based system. Consult your telephone directory under U.S. Government for a local number or call (912) 757-3000; TDD (912) 744-2299. This number is not tollfree and charges may result. Information also is available from the OPM Internet site: <http://www.usajobs.opm.gov>

Psychologists

(O*NET 27108A, 27108C, 27108D, 27108E, 27108G, 27108H, and 27108J)

Significant Points

- One half of psychologists are self-employed, about 5 times the average for professional workers.
- A doctoral degree is usually required for employment as a licensed clinical or counseling psychologist.
- Opportunities for employment in psychology for those with only a bachelor's degree are severely limited.

Nature of the Work

Psychologists study the human mind and human behavior. Research psychologists investigate the physical, cognitive, emotional, or social aspects of human behavior. Psychologists in applied fields provide mental health care in hospitals, clinics, schools, or private settings.

Like other social scientists, psychologists formulate hypotheses and collect data to test their validity. Research methods may vary depending on the topic under study. Psychologists sometimes gather information through controlled laboratory experiments or by administering personality, performance, aptitude, and intelligence tests. Other methods include observation, interviews, questionnaires, clinical studies, and surveys.

Psychologists apply their knowledge to a wide range of endeavors, including health and human services, management, education, law, and sports. In addition to a variety of work settings, psychologists usually specialize in one of a number of different areas. *Clinical psychologists*—who constitute the largest specialty—usually work in counseling centers, independent or group practices, hospitals, or clinics. They help mentally and emotionally disturbed clients adjust to life and may help medical and surgical patients deal with illnesses or injuries. Some work in physical rehabilitation settings, treating patients with spinal cord injuries, chronic pain or illness, stroke, arthritis, and neurologic conditions. Others help people deal with times of personal crisis, such as divorce or the death of a loved one.

Clinical psychologists often interview patients and give diagnostic tests. They may provide individual, family, or group psychotherapy, and design and implement behavior modification programs. Some clinical psychologists collaborate with physicians and other specialists to develop and implement treatment and intervention programs that patients can understand and comply with. Other clinical psychologists work in universities and medical schools, where they train graduate students in the delivery of mental health and behavioral medicine services. Some administer community mental health programs.

Areas of specialization within clinical psychology include health psychology, neuropsychology, and geropsychology. *Health psychologists* promote good health through health maintenance counseling programs designed to help people achieve goals such as to stop smoking or lose weight. *Neuropsychologists* study the relation between the brain and behavior. They often work in stroke and

head injury programs. *Geropsychologists* deal with the special problems faced by the elderly. The emergence and growth of these specialties reflects the increasing participation of psychologists in providing direct services to special patient populations.

Counseling psychologists use various techniques, including interviewing and testing, to advise people on how to deal with problems of everyday living. They work in settings such as university counseling centers, hospitals, and individual or group practices. (Also see the statements on counselors and social workers elsewhere in the *Handbook*.)

School psychologists work in elementary and secondary schools or school district offices to resolve students' learning and behavior problems. They collaborate with teachers, parents, and school personnel to improve classroom management strategies or parenting skills, counter substance abuse, work with students with disabilities or gifted and talented students, and improve teaching and learning strategies. They may evaluate the effectiveness of academic programs, behavior management procedures, and other services provided in the school setting.

Industrial-organizational (I/O) psychologists apply psychological principles and research methods to the workplace in the interest of improving productivity and the quality of worklife. They also are involved in research on management and marketing problems. They conduct applicant screening, training and development, counseling, and organizational development and analysis. An industrial psychologist might work with management to reorganize the work setting to improve productivity or quality of life in the workplace. They frequently act as consultants, brought in by management in order to solve a particular problem.

Developmental psychologists study the physiological, cognitive, and social development that takes place throughout life. Some specialize in behavior during infancy, childhood, and adolescence, or changes that occur during maturity or old age. They may also study developmental disabilities and their effects. Increasingly, research is developing ways to help elderly people stay as independent as possible.

Social psychologists examine people's interactions with others and with the social environment. They work in organizational consultation, marketing research, systems design, or other applied psychology fields. Prominent areas of study include group behavior, leadership, attitudes, and perception.

Experimental or research psychologists work in university and private research centers and in business, nonprofit, and governmental organizations. They study behavior processes with human beings and animals such as rats, monkeys, and pigeons. Prominent areas of study in experimental research include motivation, thinking, attention, learning and memory, sensory and perceptual

processes, effects of substance abuse, and genetic and neurological factors affecting behavior.

Working Conditions

A psychologist's specialty and place of employment determine working conditions. Clinical, school, and counseling psychologists in private practice have their own offices and set their own hours. However, they often offer evening and weekend hours to accommodate their clients. Those employed in hospitals, nursing homes, and other health facilities may work shifts including evenings and weekends, while those who work in schools and clinics generally work regular hours.

Psychologists employed as faculty by colleges and universities divide their time between teaching and research and may also have administrative responsibilities. Many have part-time consulting practices. Most psychologists in government and industry have structured schedules.

Increasingly, many work as part of a team and consult with other psychologists and professionals. Many psychologists experience pressures due to deadlines, tight schedules, and overtime work. Their routine may be interrupted frequently. Travel is required to attend conferences or conduct research.

Employment

Psychologists held about 166,000 jobs in 1998. Educational institutions employed about 4 out of 10 salaried psychologists in positions other than teaching, such as counseling, testing, research, and administration. Three out of 10 were employed in health services, primarily in hospitals, mental health clinics, rehabilitation centers, nursing homes, and other health facilities. Government agencies at the Federal, State, and local levels employed about 17 percent. Governments employ psychologists in hospitals, clinics, correctional facilities, and other settings. The Department of Veterans Affairs and the Department of Defense employ a majority of the psychologists working for Federal agencies. Some psychologists work in social service organizations, research organizations, management consulting firms, marketing research firms, and other businesses.

After several years of experience, some psychologists—usually those with doctoral degrees—enter private practice or set up private research or consulting firms. About one half of psychologists are self-employed.

In addition to the jobs described above, many held positions as psychology faculty at colleges and universities, and as high school psychology teachers. (See the statements on college and university faculty and kindergarten, elementary, and secondary school teachers elsewhere in the *Handbook*.)

Training, Other Qualifications, and Advancement

A doctoral degree is usually required for employment as a licensed clinical or counseling psychologist. Psychologists with a Ph.D. qualify for a wide range of teaching, research, clinical, and counseling positions in universities, elementary and secondary schools, private industry, and government. Psychologists with a Doctor of Psychology (Psy.D.) degree usually work in clinical positions. An Educational Specialist (Ed.S.) degree will qualify an individual to work as a school psychologist. Persons with a master's degree in psychology may work as industrial-organizational psychologists. Others work as psychological assistants, under the supervision of doctoral-level psychologists, and conduct research or psychological evaluations.

A bachelor's degree in psychology qualifies a person to assist psychologists and other professionals in community mental health centers, vocational rehabilitation offices, and correctional programs. They may work as research or administrative assistants or become sales or management trainees in business. Some work as technicians in related fields such as marketing research. However, without additional academic training, their opportunities in psychology are severely limited.



A psychologist's working conditions vary by specialty and place of employment.

In the Federal Government, candidates having at least 24 semester hours in psychology and one course in statistics qualify for entry-level positions. Because this is one of the few areas in which one can work as a psychologist without an advanced degree, competition for these jobs is keen.

Clinical psychologists usually must have completed the Ph.D. or Psy.D. requirements and served an internship. Vocational and guidance counselors usually need 2 years of graduate study in counseling and 1 year of counseling experience. School psychology requires a master's degree followed by a 1-year internship.

Most students need at least 2 years of full-time graduate study to earn a master's degree in psychology. Requirements usually include practical experience in an applied setting and a master's thesis based on an original research project.

A doctoral degree usually requires 5 to 7 years of graduate study. The Ph.D. degree culminates in a dissertation based on original research. Courses in quantitative research methods, which include the use of computer-based analysis, are an integral part of graduate study and are necessary to complete the dissertation. The Psy.D. may be based on practical work and examinations rather than a dissertation. In clinical or counseling psychology, the requirements for the doctoral degree usually include at least a 1-year internship.

Competition for admission into graduate programs is keen. Some universities require an undergraduate major in psychology. Others prefer only course work in basic psychology with courses in the biological, physical, and social sciences, statistics, and mathematics.

The American Psychological Association (APA) presently accredits doctoral training programs in clinical, counseling, and school psychology. The National Council for Accreditation of Teacher Education, with the assistance of the National Association of School Psychologists, also is involved in the accreditation of advanced degree programs in school psychology. The APA also accredits institutions that provide internships for doctoral students in school, clinical, and counseling psychology.

Psychologists in independent practice or those who offer any type of patient care, including clinical, counseling, and school psychologists, must meet certification or licensing requirements in all States and the District of Columbia. Licensing laws vary by State and by type of position. Clinical and counseling psychologists usually require a doctorate in psychology, completion of an approved internship, and 1 to 2 years of professional experience. In addition, all States require that applicants pass an examination. Most State boards administer a standardized test and many supplement that with additional oral or essay questions. Most States certify those with a master's degree as school psychologists after completion of an internship. Some States require continuing education for license renewal.

Most States require that licensed or certified psychologists limit their practice to areas in which they have developed professional competence through training and experience.

The American Board of Professional Psychology (ABPP) recognizes professional achievement by awarding certification, primarily in clinical psychology, clinical neuropsychology, counseling, forensic, industrial-organizational, and school psychology. Candidates for ABPP certification need a doctorate in psychology, 5 years of experience, professional endorsements, and a passing grade on an examination.

Aspiring psychologists who are interested in direct patient care must be emotionally stable, mature, and able to deal effectively with people. Sensitivity, compassion, and the ability to lead and inspire others are particularly important qualities for clinical work and counseling. Research psychologists should be able to do detailed work independently and as part of a team. Excellent communications skills are necessary to succeed in research. Patience and perseverance are vital qualities because results from psychological treatment of patients or from research usually take a long time.

Job Outlook

Employment of psychologists is expected to grow about as fast as the average for all occupations through 2008. Employment in health care will grow fastest in outpatient mental health and substance abuse treatment clinics. Numerous job opportunities will also arise in schools, public and private social service agencies, and management consulting services. Companies will use psychologists' expertise in survey design, analysis, and research to provide marketing evaluation and statistical analysis. The increase in employee assistance programs, which offer employees help with personal problems, should also spur job growth.

Opportunities for people holding doctorates from leading universities in areas with an applied emphasis, such as clinical, counseling, health, and educational psychology, should have particularly good prospects. Psychologists with extensive training in quantitative research methods and computer science may have a competitive edge over applicants without this background.

Graduates with a master's degree in psychology qualify for positions in school and industrial-organizational psychology. Graduates of master's degree programs in school psychology should have the best job prospects, as schools are expected to increase student counseling and mental health services. Masters' degree holders with several years of industrial experience can obtain jobs in consulting and marketing research. Other master's degree holders may find jobs as psychological assistants in the community mental health field, which often requires direct supervision by a licensed psychologist. Still others may find jobs involving research and data collection and analysis in universities, government, or private companies.

Very few opportunities directly related to psychology will exist for bachelor's degree holders. Some may find jobs as assistants in rehabilitation centers, or in other jobs involving data collection and analysis. Those who meet State certification requirements may become high school psychology teachers.

Earnings

Median annual earnings of salaried psychologists were \$48,050 in 1998. The middle 50 percent earned between \$36,570 and \$70,870 a year. The lowest 10 percent earned less than \$27,960 and the highest 10 percent earned more than \$88,280 a year. Median annual earnings in the industries employing the largest number of psychologists in 1997 were as follows:

Offices of other health care practitioners	\$54,000
Hospitals	49,300
Elementary and secondary schools	47,400
State government, except education and hospitals	41,600
Health and allied services, not elsewhere classified	38,900

The Federal Government recognizes education and experience in certifying applicants for entry-level positions. In general, the starting salary for psychologists having a bachelor's degree was about \$20,600 in 1999; those with superior academic records could begin at \$25,500. Psychologists with a master's degree and 1 year of experience could start at \$31,200. Psychologists having a Ph.D. or Psy.D. degree and 1 year of internship could start at \$37,800, and some individuals with experience could start at \$45,200. Beginning salaries were slightly higher in selected areas of the country where the prevailing local pay level was higher. The average annual salary for psychologists in the Federal Government was \$66,800 in early 1999.

Related Occupations

Psychologists are trained to conduct research and teach, evaluate, counsel, and advise individuals and groups with special needs. Others who do this kind of work include marketing research analysts, advertising and public relations managers, clinical social

workers, physicians, sociologists, clergy, special education teachers, and counselors.

Sources of Additional Information

For information on careers, educational requirements, financial assistance, and licensing in all fields of psychology, contact:

☛ American Psychological Association, Research Office and Education in Psychology and Accreditation Offices, 750 1st St. NE., Washington, DC 20002. Internet: <http://www.apa.org>

For information on careers, educational requirements, certification, and licensing of school psychologists, contact:

☛ National Association of School Psychologists, 4030 East West Hwy., Suite 402, Bethesda, MD 20814. Internet: <http://www.nasppweb.org>

Information about State licensing requirements is available from:

☛ Association of State and Provincial Psychology Boards, P.O. Box 4389, Montgomery, AL 36103-4389. Internet: <http://www.asppb.org>

Information on obtaining a job with the Federal Government may be obtained from the Office of Personnel Management through a telephone-based system. Consult your telephone directory under U.S. Government for a local number or call (912) 757-3000 (TDD 912 744-2299). This number is not tollfree and charges may result. Information also is available from their Internet site: <http://www.usajobs.opm.gov>

Urban and Regional Planners

(O*NET 27105)

Significant Points

- Most entry-level jobs require a master's degree, although a bachelor's degree and related work experience is sufficient for some positions.
- Most new jobs will arise in more affluent, rapidly growing urban and suburban communities.

Nature of the Work

Planners develop long- and short-term land use plans to provide for growth and revitalization of urban, suburban, and rural communities, while helping local officials make decisions concerning social, economic, and environmental problems. Because local governments employ the majority of urban and regional planners, they are often referred to as community, regional, or city planners.

Planners promote the best use of a community's land and resources for residential, commercial, institutional, and recreational purposes. Planners may be involved in various other activities, including decisions on alternative public transportation system plans, resource development, and protection of ecologically sensitive regions. They address issues such as traffic congestion, air pollution, and the effect of growth and change on a community. They may formulate plans relating to the construction of new school buildings, public housing, or other infrastructure. Some planners are involved in environmental issues ranging from pollution control to wetland preservation, forest conservation, or the location of new landfills. Planners also may be involved with drafting legislation on environmental, social, and economic issues, such as sheltering the homeless, planning a new park, or meeting the demand for new correctional facilities.

Planners examine proposed community facilities such as schools to be sure these facilities will meet the changing demands placed upon them over time. They keep abreast of economic and legal issues involved in zoning codes, building codes, and environmental regulations. They ensure that builders and developers follow these codes and regulations. Planners also deal with land use issues created by population movements. For example, as suburban growth and economic development create more new jobs outside cities, the

need for public transportation that enables workers to get to these jobs increases. In response, planners develop transportation models for possible implementation and explain their details to planning boards and the general public.

Before preparing plans for community development, planners report on the current use of land for residential, business, and community purposes. These reports include information on the location and capacity of streets, highways, water and sewer lines, schools, libraries, and cultural and recreational sites. They also provide data on the types of industries in the community, characteristics of the population, and employment and economic trends. With this information, along with input from citizens' advisory committees, planners design the layout of land uses for buildings and other facilities such as subway lines and stations, and prepare reports showing how their programs can be carried out and what they will cost.

Planners use computers to record and analyze information, and to prepare reports and recommendations for government executives and others. Computer databases, spreadsheets, and analytical techniques are widely used to project program costs and forecast future trends in employment, housing, transportation, or population. Computerized geographic information systems enable planners to map land areas and overlay maps with geographic variables, such as population density, as well as to combine and manipulate geographic information to produce alternative plans for land use or development.

Urban and regional planners often confer with land developers, civic leaders, and public officials. They may function as mediators in community disputes and present alternatives acceptable to opposing parties. Planners may prepare material for community relations programs, speak at civic meetings, and appear before legislative committees and elected officials to explain and defend their proposals.

In large organizations, planners usually specialize in a single area such as transportation, demography, housing, historic preservation, urban design, environmental and regulatory issues, or economic development. In small organizations, planners must be able to do various kinds of planning.

Working Conditions

Urban and regional planners are often required to travel to inspect the features of land under consideration for development or regulation, including its current use and the types of structures on it. Some local government planners involved in site development inspections spend most of their time in the field. Although most planners have a scheduled 40-hour workweek, they frequently attend evening or weekend meetings or public hearings with citizens'



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